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LONG-RANGE PLANNING CAN IMPROVE THE EFFICIENCY OF AGRICULTURAL --ETC(U)  
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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To  
The Honorable George E. Brown, Jr.  
House Of Representatives.

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Long-Range Planning Can Improve The  
Efficiency Of Agricultural Research  
And Development.

Increasing demands for food and fiber combined with increasing pressures on agricultural inputs--water, land, and energy--make it all the more important that national long-range planning be undertaken for agricultural research and development. Currently, such planning is not being conducted.

Proposed legislation would require the Department of Agriculture, in conjunction with the States, to make a food needs assessment as the first step in developing a national long-range plan. They would then be able to determine the research required to meet identified food and agricultural needs.

In addition, GAO recommends that the Department prepare a long-range plan for the agricultural research it funds and directs.

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UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

COMMUNITY AND ECONOMIC  
DEVELOPMENT DIVISION

B-201434

The Honorable George E. Brown, Jr.  
House of Representatives

Dear Mr. Brown:

This report responds to your request of September 3, 1980, in which you asked us to examine the impact of long-range planning on agricultural research.

As arranged with your office, we are sending copies of this report to the Secretary of Agriculture, the Office of Management and Budget, and other interested parties. Copies of this report will also be available to others upon request.

Sincerely yours,

*Henry Eschwege*

Henry Eschwege  
Director

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GENERAL ACCOUNTING OFFICE  
REPORT TO THE HONORABLE  
GEORGE E. BROWN, JR.  
HOUSE OF REPRESENTATIVES

LONG-RANGE PLANNING CAN  
IMPROVE THE EFFICIENCY  
OF AGRICULTURAL RESEARCH  
AND DEVELOPMENT

D I G E S T

Concerned that a lack of adequate long-range planning for agricultural research and development could lead to a serious underutilization of U.S. agricultural resources or leave the country unprepared for changes that will occur over the next few decades, Congressman George E. Brown, Jr., asked GAO to address the following questions.

- How and where is long-term planning for agricultural research and development conducted?
- What is the rationale behind these planning efforts? Is it reasonable?
- Have past planning efforts been successful? Are current research policy and efforts driven by a plan?
- What should the determinants be for strategic planning in agricultural research and development? Is the political and organizational structure of the Department of Agriculture and other affected agencies receptive to strategic planning? If not, what options would GAO recommend for such planning?

GAO found that:

- The U.S. agricultural research and development system does not perform national long-range planning which would meet or satisfy generally accepted definitions of such planning. The key participants in the system--the Department of Agriculture, land-grant colleges, and State agricultural experiment stations--do engage in some aspects of national long-range planning but only to a very limited extent. (See pp. 7 to 10.)
- Because most planning that is done is not national long-range planning, no rationale for this type of planning has been developed. The reasonableness of the planning that is performed is discussed on pages 7 to 10.

--Past planning efforts have not resulted in long-range plans. As to current efforts being driven by a plan, GAO's response is a qualified affirmative; that is, some planning, but not long-range planning, is occurring.

--Essentially, long-range planning entails establishing goals, selecting strategies for achieving those goals, setting priorities, and preparing short-range plans. Many of the parties in the agricultural research and development system support the concept of national long-range planning, but as discussed in the report, a number of factors inhibit such planning. (See pp. 10 to 11.)

#### AGRICULTURAL RESEARCH AND DEVELOPMENT SUPPORTS THE FOOD SYSTEM

U.S. agricultural research and development is performed by numerous Government units. At the Federal level, the primary agricultural research agency is the Science and Education Administration within the U.S. Department of Agriculture. (In a June 17, 1981, reorganization, the Science and Education Administration was eliminated and the planning functions are now carried out primarily by the Agricultural Research Service. See p. 5.) It spent about \$480 million for inhouse research in 1979. State research is mostly done by the State agricultural experiment stations in conjunction with State land-grant colleges and universities. States spent an estimated \$767 million in 1979 for research of which about \$242 million came from the Federal Government.

The State/Federal research efforts are commonly referred to as a partnership. The States and the Department work together, coordinate research, and exchange extensive amounts of information. These efforts are independently managed and planned. (See p. 2.)

U.S. agriculture and the supporting research system have been based on the assumption that agricultural inputs--land, water, energy, and capital--were limitless. Now faced with a greater demand for food, the United States is increasingly aware that inputs are not limitless. These problems offer a significant

challenge to the agricultural research community. (See pp. 1 to 2.)

GAO believes that these challenges will make long-range planning more and more essential. With planning, managers should be better able to anticipate future events and develop strategies for acting accordingly. Without planning, managers will continue to react to events without perspective to future impacts on other sectors of society. (See p. 13.)

#### USDA's PLANNING

The Federal/State research partnership does not conduct national planning for agricultural research and development. The long-range planning that does occur is done almost exclusively by the Department and focuses on inhouse research. Current planning efforts deal primarily with short-term or operational planning. (See pp. 7 to 10.)

Some Science and Education Administration managers believe that inhouse long-range planning is inhibited because (1) it is considered a "luxury" and cannot be attended to before daily operational needs are addressed and (2) some officials of the State research system object to internal Department research planning because they believe a stronger USDA research planning effort would eventually lead to Federal planning and control of State research operations. (See p. 11.)

#### NATIONAL LONG-RANGE PLANNING

National long-range planning is extremely difficult for agricultural research since authority and management for individual research projects is split among Federal, State, local, and private authorities. This difficulty is compounded by (1) frequent changes in departmental leadership and (2) limited executive interest and guidance in long-range planning.

As a result and as with Agriculture's inhouse research, no national planning for agricultural research and development is conducted. GAO found virtually total agreement among research managers and agricultural decisionmakers that current agricultural research was not directed or influenced by a long-range plan. In fact, many researchers

interviewed by GAO believe that national long-range planning is not feasible for agricultural research and that a lack of such planning does not hamper the food and agriculture system. Other researchers oppose long-range planning, fearing that it would lead to central control and loss of flexibility. Flexibility and ability to respond quickly to problems are often cited as beneficial attributes of the current research system.

It seems unlikely that national long-range planning efforts for agricultural research and development can be immediately undertaken given the inhibiting factors facing the system. Nevertheless, GAO believes a better approach would be for Agriculture and the State research organizations to cooperate in developing the first steps in long-range planning--identifying future food needs and the research alternatives that would assist in meeting those needs.

In March 1981 GAO provided the Chairman, Subcommittee on Department Operations, Research, and Foreign Agriculture, House Committee on Agriculture, proposed legislation that would direct the Department of Agriculture, in conjunction with the States and their land-grant colleges and experiment stations, to make a food needs assessment as the first step in developing long-range goals and objectives for the agricultural sector and determining the research required to meet the identified needs. This language has been included in H.R. 2561. (See app. I.)

In addition, the Department, as the primary Federal agricultural researcher, has no compelling rationale for not developing a long-range plan for inhouse research. In 1977 GAO recommended that the Department develop such a plan. (See p. 7.) GAO believes that the Department has not adequately responded to that recommendation, but a recently initiated budgeting process within the Agricultural Research Service and proposed operating guidelines are indicative of both the desire and ability to move more aggressively toward long-range planning.

#### RECOMMENDATION

GAO again recommends, as it did in 1977, that the Secretary of Agriculture develop an agency-wide plan for inhouse agricultural research and development. (See p. 14.)

#### AGENCY COMMENTS

The Agricultural Research Service felt that GAO's conclusion regarding long-range planning was too broad and did not fairly address Service activities. GAO agrees that the Service is engaged in some long-term planning activities, but its efforts are not integrated into an agencywide plan.

#### ASSESSMENT OF EFFECTIVENESS OF TITLE XIV ADVISORY BODIES

Congressman Brown also asked GAO to review the effectiveness of the Joint Council on Food and Agricultural Sciences and the National Agricultural Research and Extension Users Advisory Board. These advisory bodies were established by title XIV of the Food and Agriculture Act of 1977 to assist the Secretary of Agriculture in formulating basic policies, goals, strategies, and priorities for agricultural research, extension, and teaching. (See p. 15.)

The Joint Council has prepared some reports on research and development planning and has created a structure for coordination but has had little direct impact on planning and coordination. (See p. 21.)

The Users Advisory Board has published two reports annually. As contrasted with the Council, the Board has taken a more focused approach in reviewing research policies and priorities and has had more input to the Department's planning efforts. (See p. 21.)

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ABBREVIATIONS

GAO	General Accounting Office
JPE	Joint Planning and Evaluation
NRP	National Research Program
SEA	Science and Education Administration
SEA-AR	Science and Education Administration- Agricultural Research
SEA-CR	Science and Education Administration- Cooperative Research
UAB	National Agricultural Research and Extension Users Advisory Board
USDA	U.S. Department of Agriculture

CHAPTER 1  
INTRODUCTION

Agriculture plays an enormous role in U.S. society--in meeting domestic food needs, in making important contributions to world food supplies, and in bolstering the Nation's economy.

--Agriculture is one of the Nation's largest industries with assets of \$820 billion in 1979, equal to about 75 percent of the capital assets of all manufacturing corporations in the United States.

--Retail sales of food and fiber products exceeded \$450 billion in 1979.

--Agriculture is the second largest single exporter with over \$29.4 billion in export sales in 1978.

AGRICULTURAL RESEARCH AND DEVELOPMENT  
SUPPORTS THE FOOD AND FIBER SYSTEM

Much of the agricultural sector's success can be directly linked to research and development. Post-Civil War settlement of the western States and territories was linked to agriculture and education through the establishment of land-grant colleges and universities in every State. A research system and a unique Federal/State partnership evolved that became capable of exploiting the vast U.S. potential for food and fiber production. After World War II, the research system revolutionized agricultural production with chemical, genetic, and mechanical breakthroughs. Agricultural production was based on the assumption that inputs--land, water, energy, and capital--were virtually limitless.

With apparently limitless inputs, production increases seemed assured. Indeed, before the 1970's, the Nation's principal food problem was to manage seemingly endless surpluses while maintaining sufficient farm income levels to ensure that farmers continued to produce.

The 1980's will find agriculture driven by a variety of outside influences with goals that may be mutually exclusive. The United States will need to manage its agricultural resources to meet the world's rapidly expanding food needs while satisfying political, social, economic, and environmental goals affecting agricultural production and food costs.

Faced with a more complex demand situation, the United States is increasingly aware that inputs are not limitless. Increased competition for available resources, such as land and capital, compounded with restrictions on water and energy, make increased food production relatively more difficult than in the past. To a

large extent this difficulty is one that must be overcome by the agricultural research community.

#### ORGANIZATION OF PUBLIC SECTOR AGRICULTURAL RESEARCH AND DEVELOPMENT

U.S. agricultural research and development is highly decentralized. At the Federal level, the Science and Education Administration (SEA) of the U.S. Department of Agriculture (USDA) is the primary performer of agricultural research. SEA was established in 1978 by combining several existing USDA agencies--Agricultural Research (AR), Cooperative Research (CR), the Extension Service, and other smaller activities. SEA-AR is responsible for agricultural research performed by Federal scientists at eight major research centers and about 150 locations around the country. SEA-CR coordinates Federal and State research and administers funds appropriated by the Congress for State agricultural research under a variety of formula, special, and competitive grants.

State research is primarily done by the State agricultural experiment stations in conjunction with State land-grant colleges and universities. Each State essentially conducts research as an independent entity although there are some regional research projects.

The State/Federal research efforts are commonly referred to as a partnership. The States and USDA work together and coordinate research. Although they exchange extensive amounts of information, there is no common management and only limited common planning.

The States have some input into Federal budgeting by reviewing budget priorities and by lobbying within both USDA and the Congress. USDA has virtually no input into State research planning even though about one-third of that research is supported by Federal funds. The remaining two-thirds comes from the States, donations, grants, or private business.

In 1979 USDA spent about \$480 million for inhouse research (research funded and directed by USDA) while the States spent an estimated \$767 million. About \$242 million of the State expenditures came from the Federal Government. USDA research represented about 4,100 scientist/years of effort. The States' effort represented about 7,000 scientist/years.

#### SEA reorganization

On June 17, 1981, a reorganization within USDA eliminated SEA. Four program agencies--Agricultural Research Service (formerly SEA-AR), Cooperative State Research Service (formerly SEA-CR), the Extension Service, and the National Agricultural Library--report to the Director of Science and Education. The Joint Planning and

Evaluation staff (JPE)--responsible for many of the planning functions described in chapter 2--no longer exists. Most research planning will be done by the Agricultural Research Service.

The reorganization does not affect the findings, conclusions, or recommendations discussed in this report. However, the Director of Science and Education apparently will have less influence on planning direction while the administrators of the four program agencies will have relatively more control over their respective agencies.

ADVISORY BODIES CREATED TO ASSIST  
IN LONG-RANGE PLANNING FOR AGRI-  
CULTURAL RESEARCH AND DEVELOPMENT

The Congress enacted the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (title XIV of the Food and Agriculture Act of 1977, Public Law 95-113) having found, among other things, that

- expanded agricultural research was needed to meet the rising demand for food and fiber,
- opportunities for agricultural advances had become increasingly limited because basic research had been neglected in favor of developmental research,
- agencies conducting federally supported research were not fully coordinating their work, and
- research agencies were only partially successful in responding to the needs of all persons affected by their research.

The act was intended, in part, to improve coordination and planning of agricultural research, to identify and establish research priorities, and to increase cooperation between research performers and users.

To help the Secretary of Agriculture formulate basic policies, goals, strategies, and priorities for agricultural research, extension, and teaching, the Congress directed the Secretary to establish two advisory bodies--the Joint Council on Food and Agricultural Sciences and the National Agricultural Research and Extension Users Advisory Board (UAB). The Joint Council is generally composed of research and extension performers, the UAB of research users. Two members of the UAB also serve on the Joint Council to facilitate coordination between the two groups.

OBJECTIVES, SCOPE, AND METHODOLOGY

Concerned that a lack of adequate long-range planning for agricultural research and development could lead to a serious underutilization of U.S. agricultural resources or leave the

country unprepared for changes that will occur over the next few decades, Congressman George E. Brown, Jr. (see app. II) asked us to address the following questions.

- How and where is long-term planning for agricultural research and development conducted?
- What is the rationale behind these planning efforts? Is it reasonable?
- Have past planning efforts been successful? Are current research policy and efforts driven by a plan?
- What should the determinants be for strategic planning in agricultural research and development? Is the political and organizational structure of the Department of Agriculture and other affected agencies receptive to strategic planning? If not, what options would GAO recommend for such planning?

Subsequently, the Congressman's office asked also that our review include an assessment of the effectiveness of the two advisory bodies established under title XIV of the 1977 act.

Our review is intended to offer an overview of long-range planning for agricultural research and development. Because the agricultural research community does not have a specific design for such planning and does not conduct such planning on a systematic basis, we concentrated more on the perceived barriers to planning than on planning itself.

This report does not examine the structural efficiency of publicly supported agricultural research. We neither endorse nor condemn the present research system, although we believe a comprehensive review of that system is warranted. We feel an upcoming review by the Office of Technology Assessment will to a large extent fill that need.

We began by reviewing general material relating to planning--what is long-range planning, what are the benefits of long-range planning, and what are the general barriers to such planning? From this review we developed criteria as to what constituted long-range planning. (See p. 6.)

During the next phase we compared ongoing planning efforts--mostly in USDA--with our criteria. We then interviewed SEA managers (including the director and administrators of all SEA operating units), other USDA officials outside SEA, members of the Office of Science and Technology Policy, the Chairman of the Experiment Station Committee on Organization and Policy, representatives of the National Association of State Universities and Land Grant Colleges, other State research managers, and staff members of various congressional committees. These persons represented a good crosscut of individuals having a primary concern

for publicly supported agricultural research and development. The interviews were designed to ascertain individual and organizational attitudes towards long-range planning and what barriers existed to prevent such planning.

Our assessment of the Joint Council on Food and Agricultural Science and the National Agricultural Research and Extension Users Advisory Board consisted of reviewing the requirements set forth for these bodies in title XIV of the 1977 act and comparing these requirements with the contents of mandated reports. This assessment was mostly based on interviews with each member of both advisory bodies and numerous interviews with USDA officials who would make use of products from the advisory bodies.

## CHAPTER 2

### CURRENT PLANNING ACTIVITIES DO NOT ADD UP TO A NATIONAL LONG-RANGE PLAN

The Federal/State research partnership does not conduct national planning for agricultural research and development. Virtually all of the research managers or decisionmakers we met with felt that the current research system was not directed or influenced by long-range planning at the national level, among the States, or within USDA. Most agreed that national planning would be difficult to implement because research is conducted by different levels of governments.

Although national long-range planning is not being conducted, USDA does some planning for USDA-conducted research. It has attempted to set long-term goals and has developed operational plans for inhouse research, but these efforts have not resulted in a comprehensive long-range plan. USDA has, however, done some long-range planning for specific research areas.

In its broadest dimensions comprehensive long-range planning at the national level would begin with identifying problems and long-term issues that require timely decisions as well as evaluating the status of national resources and trends in policies and programs. From this, planners would develop national, social, political, and economic goals in light of anticipated domestic and international developments and would devise interdependent strategies; they would rank goals and possible courses of action; and they would "scan the horizon" for emerging issues, assess risks, and develop contingency plans for emergencies.

By long-range, we mean a period of from 5 to 50 years. Planning for less than 5 years is generally operational. The time frame of a plan normally varies with the volatility of the subject. We defined the long-range planning process as including the following essential elements:

- Identifying problems, needs to be met, or opportunities to be realized.
- Determining consensus goals or objectives.
- Selecting the means to reach the goals after analysis of alternative options.
- Determining priorities for research and development efforts.
- Preparing operational plans.
- Continually updating and evaluating the long-range plan.

In the course of our review, we often found resistance to the concept of long-range planning. Most of this resistance resulted from a misconception that centralized control or direction was a prerequisite for long-range planning. Long-range planning is a management tool that can be used by any type of organization. While long-range planning makes common goals necessary, it does not have to entail common or centralized management.

#### USDA PLANNING EFFORTS

USDA has long struggled with the concept of long-range planning. USDA efforts, such as its 1966 study "A National Program of Research for Agriculture" and its 1974 study "Future Needs and Issues in Agricultural R&D," did identify potential problems and research needs, but they were unsuccessful in moving USDA toward long-range planning for agricultural research and development for a variety of reasons: the planning and research functions were separated, those that were developed were seen as abstract documents, or the prepared documents were never really intended to be plans. These reports to a degree influence the short-term planning within USDA and to that extent are useful.

In our 1977 report on USDA's management of agricultural research, <sup>1/</sup> we recommended that the Secretary of Agriculture take necessary steps to develop and maintain a national agricultural research plan. USDA agreed that improvements were needed in long-range planning and that a great deal of interagency planning and cooperation under USDA leadership was needed. USDA did not take a position on our recommendation but referred to its 1966 study which discussed "national planning efforts." USDA said that, although the 1966 agricultural research plan had not been updated, specific programs were updated (as of 1977).

Our 1977 report on those planning efforts showed that the plans did not provide for developing and maintaining an up-to-date national plan for agricultural research. We recognized that national plans had been developed for certain research areas. However, the USDA plans merely identified research needs and set priorities within selected areas. They did not correlate the needs and priorities of all the areas covered by agricultural research.

SEA now undertakes specific types of activities which include some aspects of long-range planning--the development of National Research Programs (NRPs) and several integrated planning documents for related research areas.

SEA-AR has prepared 62 NRPs identifying research objectives and outlining 10-year plans for areas such as animal and plant

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<sup>1/</sup>"Management of Agricultural Research: Need and Opportunities for Improvement," CED-77-121, Aug. 23, 1977.

production and soil, water and air sciences. The NRPs are intended to be "dynamic statements of SEA-AR research plans," identifying important national problems and describing plans for achieving technological objectives. The NRPs are SEA-AR's stated justifications for current and future research activities.

The actual impact on planning, however, is more limited. The director of SEA-AR's National Program Staff (which prepares the NRPs) and members of SEA's JPE staff said that while NRPs are statements of goals or objectives, the NRPs do not drive research programs or directly influence budget development. However, because many of the SEA-AR personnel work on both the NRPs and budgets, some continuity exists between the NRPs and budgets.

The JPE staff is responsible (among other duties) for producing or encouraging the production of several plans that cross-cut normal research program areas. These include integrated pest management, aquaculture, energy, home economics research, higher education, and renewable resources extension. Except for the energy plan, these documents should not be considered long-range plans as they go little beyond goal setting. None of the plans have been adopted in their entirety.

The plan for energy is the most fully developed in terms of long-range planning. It essentially contains all the elements of long-range planning as defined earlier. However, it has not been fully reviewed within SEA-AR (responsible for most of USDA's energy research) and as with the other plans has not been adopted. The aquaculture plan is being developed as a national plan in cooperation with the Departments of Commerce and the Interior. Public Law 96-362 requires such a plan.

USDA does plan in other, nonresearch areas. For example, national plans for forestry and soil conservation are being developed by USDA's Forest Service and Soil Conservation Service. Both of these plans are in direct response to legislation and both are being developed in cooperation with other agencies.

#### Goal setting and operational planning for inhouse research

Goal setting is the critical element in long-range planning. Well defined goals can establish achievable objectives for the research system. As mentioned in chapter 1, goal setting allows or forces consensus building. Broadly defined goals are relatively easy to determine. Narrowly structured goals are more difficult to obtain but are more valuable in that they give more definition to the other elements of planning, especially establishing priorities.

SEA-AR undertakes a number of goal setting activities with input from a wide number of sources--State and Federal researchers, Congress, producers, advisory bodies, and the Executive Branch.

Their efforts have more impact on determining priorities for the short-range budgeting cycle rather than influencing development of long-range plans.

SEA has developed an increasingly formal operational planning process directly linked to budget formulation. The agency has established research priorities using technical information from research staff. NRPs have served as one data source but are not a primary input in establishing priorities. Research performers and users communicate their priorities to SEA administrators and researchers at intervals throughout the budgeting process. SEA coordinates research efforts through its decision unit teams and special analysis teams. The decision unit teams assess agricultural research efforts within a specific topic (for example, integrated pest management for animal pests), define the minimum level of effort to ensure research continuity, and establish priorities for research under their review. The special analysis teams assess program activities cutting across decision units or program activities requiring additional emphasis. This process occurs yearly and covers a 3-year cycle. (Agricultural Research Service is now developing a 6-year cycle.)

Although SEA is responsible for all SEA research, its authority is limited in practice primarily to SEA-AR. Within SEA-CR, direct agency control is restricted to the special and competitive grants program in which the Congress establishes the research to be done and, in some cases, the performer. SEA-CR coordinates but does not establish priorities for formula funds dispensed to the States on a block grant basis. SEA-CR may also recommend research initiatives in some instances, but such recommendations require State cooperation to be implemented and do not carry the full weight of law. SEA-CR and State officials agree that State research is independent (and has a role distinct) from SEA-AR. They said that the State research priorities complement but do not mirror Federal priorities.

Despite the progress in developing formal budgeting structures, two key issues remain unresolved. First, can research priorities be developed within the budgeting process for SEA as a whole? And second, is zero-based budgeting, mandated by the Office of Management and Budget, the most appropriate method for reviewing scientific research? Our review indicates that establishing agencywide priorities is difficult because the research roles and the autonomy of SEA subunits have not been fully defined.

Some SEA officials believe annual funding reviews create dissension and represent attempts by administrators to rejustify funding priorities from prior periods. They question whether ongoing research projects should be considered in subsequent budgeting processes. Several officials characterized the establishment of research funding priorities on an annual basis as not very productive because other mechanisms already exist outside the funding process for reviewing and evaluating ongoing research.

Several officials believe such reviews threatened the continuity of some research and reduced the ability of some States to establish larger resource bases for additional research. Most believe that the budgeting process had improved communication within SEA but question whether the staff years and effort used could not better be used elsewhere.

Factors inhibiting planning  
for inhouse research

Although operational planning has become increasingly developed since SEA's inception, long-range planning has not developed--either for SEA's subunits or for the Department (for agricultural research). As mentioned in earlier sections, the Department--within SEA-AR--does develop long-range planning documents for individual research areas and for some integrated research areas, but for the most part, these efforts are not integrated into departmental operations and are certainly not integrated into a unified long-range plan guiding all of USDA's agricultural research.

The SEA managers we talked with all agreed that long-range planning is necessary to meet future food needs, especially when those needs are compounded by increased restrictions on agricultural inputs, particularly water and energy. They also agreed that research within SEA is not driven by a long-range plan. Although one cannot explain with absolute certainty why the gap exists between wanting long-range planning and having such planning, three opinions repeatedly surfaced in our interviews with SEA managers:

- A belief that long-range planning is a "luxury" and cannot be afforded. The Director of SEA said that he has sufficient staff only to address day-to-day operations and, while long-range planning is desirable, it cannot be accommodated to the exclusion of daily operational needs.
- A belief that the State research system, including SEA-CR, uses its influence to thwart internal USDA research planning because State and SEA-CR officials believe a stronger USDA research planning effort would eventually lead to Federal planning and control of State research operations. States are afraid of a strong Federal planning effort which sooner or later implies accountability for Federal funds being used for State research efforts.
- SEA is a relatively new organization and is just now beginning to overcome vigorous internal and external pressures against its very existence. (This argument is no longer valid since SEA no longer exists; see p. 3.)

### Proposed SEA operating guidelines

By far the most ambitious development for research planning within USDA is a recently developed staff paper proposing operating guidelines for the Science and Education agencies. These guidelines would move the agencies toward operation under a mission structure as opposed to the current activities structure.

As currently structured, research planning is geared toward somewhat narrowly defined national research program areas. These program areas are essentially developed independently of one another, creating a possibility of conflicting goals or research programs working at cross-purposes with one another. An effective mission-oriented program can direct research programs to goals common to the agencies rather than goals restricted to a particular research activity.

The draft guidelines propose that the research agencies develop the means of providing the research, education, extension, and administrative management needed to support USDA activities in four missions: (1) increasing productivity of food and agricultural products, (2) developing an efficient marketing and processing system, (3) conserving natural resources, and (4) improving the well-being of people. The draft also identifies approaches and strategies to be undertaken to meet each mission.

At the time of this report, the proposal had not been fully reviewed or approved. The Director of Science and Education, however, told us that he fully supports the concepts of the guidelines and expects to implement them.

If this proposal is adopted, long-range planning research should be easier to obtain. For one, goals and approaches would have already been established based on identification of problems and needs. If these in turn drive priority setting and budget development, then the essential elements of long-range planning--as we have defined it--have been met.

### NATIONAL LONG-RANGE PLANNING IS NOT DONE

No national planning for agricultural research and development is conducted. We found virtually total agreement among research managers and agricultural decisionmakers that the current research system was not directed or influenced by a long-range plan. As might be expected, considerable disagreement existed among these individuals as to whether this lack of long-range planning was harmful or hindered the system in any way.

National long-range planning is extremely difficult for agricultural research with management and planning scattered among Federal, State, local, and private authorities. The difficulties are compounded by uncertainties and conflicts that require compromises in equally desirable goals. In fact, many of the research

managers we interviewed believe that national long-range planning is not feasible for agricultural research. Others--mostly State research officials--oppose long-range planning, fearing it would lead to Federal (USDA) control over State research and a loss of flexibility. Flexibility and ability to respond quickly to problems are often cited as beneficial attributes of the current research system by critics of long-range planning. While such attitudes have hampered the development of long-range planning, structural difficulties have also held back such planning:

- Lack of consistent leadership: The frequent changes in USDA administration (as in all Federal agencies) make it difficult to develop strategies consistent with the views of incoming administrations. These frequent changes may make the process of long-range planning seem futile.
- Lack of continuing congressional interest: The Congress expressed a need for long-range planning in Public Law 95-113 (Food and Agriculture Act of 1977) but has not followed up. Congressional oversight and appropriations hearings focus more on individual research projects than on research direction. Without continuing congressional interest, an important incentive to planning is missing.
- Lack of executive guidance: Limited executive interest in long-range planning has also inhibited such planning. The Office of Science and Technology Policy within the Executive Office of the President could be the focal point of such interest and guidance.

#### CONCLUSIONS

We believe that long-range planning can offer distinct advantages to agricultural research. With planning, managers are better able to control conditions by anticipating future events and acting accordingly. Without planning, managers react to events. The longer the effective planning cycle, the more time there is for anticipation; the shorter the cycle, the less time available for anticipation. The shorter cycle increases the risk that a less appropriate course of action will be chosen. Planning--particularly long-range planning--serves as a vehicle for compelling managers to anticipate future needs and determine how those needs can be satisfied with available resources.

The contrast to planning is reaction. The USDA/State research system is largely reactive. In our opinion, several conditions must be met for a reactive system to work well: (1) the research base must be large and encompassing so that unusual or unexpected problems can be accommodated, (2) the system must be flexible to allow rapid shifts of resources, (3) research funding must be relatively stable, and (4) a high quality of research and researchers must be maintained. Of course, these four items can be scaled to the relative importance or critical

nature of the research area. For agriculture, that relative importance is quite high. On the other hand, disadvantages inherent in a reactive system are:

- Relative inability to estimate secondary impacts on such things as farm structure or land use.
- Relative difficulty in coordinating research or assuring that research projects are not working at cross-purposes.
- Relative inflexibility of the system to regroup when faced with declining resources (money, facilities, and manpower).
- A sense of complacency that what worked in the past will work in the future.

Although USDA has made some progress in improving its development of long-range planning for USDA-directed research, the impact of the inhibiting factors discussed in the previous section makes it unlikely that USDA will be able to develop a national plan for agricultural research and development. Effective national planning can take place only if all involved parties participate in the plan's design. The Director of Science and Education believes that the Joint Council on Food and Agricultural Sciences (see ch. 3 for details on the Joint Council's role) could provide a vehicle for developing such a plan. We agree with this position. The Joint Council represents the major governmental units involved in agricultural research, although, as indicated in the next chapter, it has had little direct impact on agricultural research planning.

Because of factors inhibiting development of a national long-range plan, we believe that any requirement to mandate national long-range planning would not meet with any more success than earlier efforts to develop comprehensive planning documents. We believe a better approach would be for both the Federal and State agricultural research participants to cooperate in developing the first steps in long-range planning--identifying future food and agricultural needs and the research alternatives that would assist in filling them.

At the very least, such information could provide an agenda for policy considerations on food and agricultural issues. Hopefully, it could do more. A structured, cooperative effort to develop this information--without redefining "who" should do "what"--could reduce the tension among the Federal/State research partners.

Also, USDA, as the primary Federal agricultural researcher, has no compelling rationale for not developing a long-range plan for inhouse research. We recommended that USDA develop such a plan in a 1977 report. USDA did not adequately respond to our

recommendation. However, the recently initiated budgeting process within SEA and proposed operating guidelines are indicative of both the desire and ability to move more aggressively toward long-range planning.

We provided proposed legislation to the Chairman, Subcommittee on Department Operations, Research, and Foreign Agriculture, House Committee on Agriculture, on March 17, 1981, that would direct the Department of Agriculture, in conjunction with the States and their land-grant colleges and experiment stations, to make a food needs assessment as the first step in developing long-range goals and objectives for the agricultural sector and determine the research required to meet the identified needs. (See app. I.)

#### RECOMMENDATION

We recommend that the Secretary of Agriculture develop an agencywide long-range plan for agricultural research and development.

#### AGENCY COMMENTS

The Agricultural Research Service felt that we did not adequately characterize the scope of long-range planning within USDA. (See app. III.) The Service identified several areas that (in their belief) constituted long-range planning.

We agree that the Service and the Department have undertaken some of the functions of long-range planning. The Department's activities are focused on individual research areas, and as Department officials stated in interviews, are more statements of goals rather than plans.

## CHAPTER 3

### ADVISORY BODIES HAVE HAD MIXED SUCCESS IN AFFECTING LONG-RANGE PLANNING

As discussed in chapter 1, the Joint Council on Food and Agricultural Sciences and the UAB were established by title XIV of the Food and Agriculture Act of 1977 to provide inputs to USDA for planning (among other duties). These bodies have generally been unsuccessful in directly influencing USDA planning but have had some success in increasing the awareness of Federal and State research officials on a variety of research issues.

#### LIMITED SUCCESS BY THE JOINT COUNCIL IN CARRYING OUT RESPONSIBILITIES

As spelled out in title XIV of the Food and Agriculture Act of 1977, the Joint Council's primary responsibility is to foster coordination of the agricultural research, extension, and teaching activities of the Federal Government, the States, colleges and universities, and other private and public institutions and persons involved in food and agricultural sciences. Other assigned responsibilities relating to research include

- providing a forum for the interchange of information;
- determining high priority agricultural research areas and making recommendations as to current and long-range needs, priorities, and goals together with means for achieving the goals; and
- developing a data system for all federally supported agricultural research.

The legislation also establishes the Joint Council's basic operating parameters. The Council, which currently has 24 members, is required to meet at least once every 3 months and is to be jointly chaired by the Assistant Secretary of Agriculture responsible for research, extension, and teaching and a non-Federal member elected by the Council. Because USDA currently has no position designated as Assistant Secretary for research, extension, and teaching, the Secretary has designated the Director of Science and Education, who is on the same organizational level as an Assistant Secretary, as the Federal cochairperson. The Council is required to submit an annual report to the Secretary that recommends coordination mechanisms and reviews ongoing programs in research, extension, and teaching. Annual reports have been submitted for 1978, 1979, and 1980, along with other reports on future areas of emphasis in food and agricultural sciences.

The opinions and comments we obtained from a number of officials throughout the agricultural research system indicate that the Joint Council has achieved only limited success relative to its responsibilities. Most Joint Council members, however, stated that the Council has had some success, although three members said that the Council has not been successful in effectively coordinating and planning agricultural research, adding that any organization like the Council cannot be effective. Five members felt that the Council has not met its legislative mandate, while 11 members felt the legislative mandate was being met.

Two USDA officials interviewed (one, a member of the Council) commented that the Joint Council is simply unable to coordinate the numerous efforts and plans of all the Federal and State research organizations as specified in the legislation. The Chairman of the Experiment Station Committee on Organization and Policy told us that the Council has been unsuccessful in developing a plan or integrated approach to agricultural research, even though the "areas of emphasis" report and "proposed initiatives" report present such a plan, according to their summaries.

The two Joint Council reports on planning, plus a planning report by the National Planning Committee, for the most part, simply (1) summarize trends, such as population and economic conditions that can affect long-term food needs and (2) identify priority research areas. The reports do not establish goals, rank priorities, or develop implementing programs. Without these, we feel the Joint Council's reports will continue to have only minimal impact on agricultural research planning. (Note: The Council also prepares the Secretary's report on 5-year projections for research, teaching, and extension priorities required by title XIV of the 1977 act.)

The officials with whom we spoke offered a number of opinions as to the reasons for the Joint Council's limited success. In summary, the reasons were:

- A significant part of the State research sector does not believe the Council is necessary and the existing coordinating and planning structure is satisfactory.
- A consensus as to the Council's role has not been reached.
- The membership on the Joint Council is not representative of agricultural research performers.

To accomplish its coordination responsibilities, the Joint Council established a regional and national committee structure.

Twelve functional committees, three in each region, interact with both a regional council and a national functional committee. The seven regional councils and national committees all

report to the steering committee and to the full Joint Council. Membership on any of the 19 committees/councils is very flexible. Members are appointed by either the Joint Council or regional councils, in the case of regional committees. The number of members in any one group has not been established by the Council.

This structure has caused considerable controversy. Some State experiment station directors believe that USDA already receives input from the States, so the Joint Council's structure is not needed. Three UAB members believe that the Council's structure will only dilute the Council's views and shroud them in bureaucracy. An official of a private organization concerned with agricultural issues expressed similar comments; that is, the Council structure only creates another, unnecessary bureaucratic level. Additionally, in August 1980 the North Central Agricultural Experiment Station Director's Association voted to refrain from participating in the regional and national planning processes, including the Joint Council. It felt that USDA did not use State input in budgeting, plus it did not understand the role of the regional planning councils as established by the Council. It felt that it probably duplicated the regional research, extension, and teaching planning committees. Also, the Association disapproved of the membership and size of the Joint Council's national research planning committee. The association has since resumed participation in regional and national planning activities.

The second-cited reason for the Council's limited success--lack of a consensus on the Council's role--reflects the fact that the Joint Council members have not been able to define their responsibilities and do not view their role in the same fashion as SEA officials. Individual members define the Council's coordination role in widely differing terms, from "facilitating the exchange of information," to "acting as an oversight Council" and "setting research priorities." Adding to the confusion as to roles, SEA takes the position that it considers the Joint Council to be a major input to SEA's long-range planning process and to accomplish much of the legislative planning responsibilities of the Secretary. Joint Council members, however, believe their key role lies in fostering coordination and that their role in planning is that of an advisor to other actual plan preparers.

The third-cited reason deals with membership. The 24 current members represent the following groups: 9 from USDA, 1 from the Office of Science Technology and Policy, 2 from the UAB, 2 from private industry, and 10 from State agricultural experiment stations, extension offices, land-grant and nonland-grant colleges, and other interested parties. According to the Chairman of the Experiment Station Committee on Organization and Policy, in the view of State officials (land-grant colleges and experiment stations), their representation on the Joint Council is inadequate (less than 50 percent) considering that these colleges and stations fund and conduct the vast majority of agricultural research. Other officials, including one USDA representative, point to the large

number of USDA employees on the Council and express the belief that because of this membership, the Council is dominated by USDA. Joint Council members, however, are undecided; five members feel State representation should be increased and five members feel that no changes in representation should be made.

Related to this issue is the fact that the Joint Council relies on USDA for staff support. The Joint Council believes having its own staff would enhance the Council's value as an independent advisory body.

RESPONSIBILITIES MORE EFFECTIVELY  
MET BY THE USER'S ADVISORY BOARD

Along with the general charge of preparing independent advisory opinions on the food and agricultural sciences, title XIV sets out a number of specific responsibilities for the UAB. Basically these are

- reviewing the policies, plans, and goals of programs within USDA involving food and agricultural sciences and related programs in other Federal agencies, State agencies, colleges, and universities;
- reviewing and advising the Secretary of Agriculture on national policies, priorities, and strategies for agricultural research and extension for the short and long term;
- assessing the levels and allocations of funds for agricultural research and extension; and
- assessing agricultural research and extension conducted by private business.

The legislation also defines the UAB's general operating procedures. It is required to meet at least once every 4 months, including at least one combined meeting annually with the Joint Council. To date, the UAB has exceeded this mandate. The UAB, which has 21 members, annually elects a chairperson and vice chairperson, along with the two UAB representatives to the Joint Council. Unlike the Joint Council, the UAB is required to submit two reports annually. One is to be a statement to the Secretary recommending allocations of responsibilities and funding levels among federally supported agricultural research and extension programs, including a review and assessment of the allocation of funds for agricultural research and extension for the preceding fiscal year by organizations represented on the Joint Council. The second is a report to the President and to the House and Senate agriculture and appropriations committees reviewing the President's proposed budget for food and agricultural sciences. These statements and reports have been submitted as mandated.

According to most UAB members, the Board has focused its efforts primarily on reviewing and advising the Secretary on national

policies, priorities, and strategies. A past Board vice chairperson said that the UAB has concentrated more on assessing long-term than short-term priorities. The UAB's reports reviewing USDA budgets reflect such a focus. At a UAB meeting, whose main purpose was to review the proposed budget, we observed that the members devoted about 20 percent of their time to broad, long-range policy issues related to food and agricultural sciences. USDA officials agree that the UAB should continue to deal with long-term considerations and that attempts to abruptly redirect research and extension programs in the short term would result in great inefficiencies.

Although one Board member questioned whether the UAB should persist in identifying priorities when USDA had no long-range system for the priorities to fit into and most members told us that they felt that they have not had any impact, USDA officials told us that the UAB has been effective. These officials, when questioned, however, were unable to point to specifics and we were unable to observe any actual impact. Some USDA administrators said that they refer to UAB reports when setting their own priorities, but, because UAB priorities often parallel USDA positions, the UAB's impact is uncertain. USDA's responses to UAB reports indicate the extent of the similarity of the two groups' positions. In response to UAB's October 1979 report, USDA concurred fully or in part in 41 of the UAB's 46 recommendations. In concurring, USDA often cited ongoing work as covering the recommendations. When disagreeing with the Board, USDA either said that another agency or group should do the work or disagreed with the Board's high priority designation.

Regarding UAB's other responsibilities, 9 of the 21 Board members told us that they believed their efforts in reviewing USDA plans, budgets, and funding allocations have had some impact on USDA. But at the same time, six other members said the UAB has not had any impact on USDA. According to the UAB, its reviews of plans and budgets have been hampered by the lack of an adequate data system regarding ongoing research. In addition, USDA officials reported that UAB reports on USDA budgets are not received at a time that allows them to be useful in the current-year budget cycle. The Director of Science and Education has stated that the Joint Council is developing an information system for State and Federal research. Additionally, he has created a new office for paperwork within SEA. The Chairman of the UAB has stated that he is somewhat reassured by these actions. In response to the timing of UAB reports, legislation has been introduced that would require that the reports be submitted in a more useful time frame.

The Board's impact on the State and private researchers' programs is also minimal. In fact, one-third of the UAB members believe that a certain amount of animosity is directed toward the UAB from the experiment station directors and land-grant college presidents. Based on discussions with representatives from these groups, we believe that it is more a case of uncertainty

about the Board's role than animosity. As to private sector research programs, UAB members said that their knowledge of private sector programs was inadequate but that they intended to do more review of such programs. A limiting factor is the lack of available data on private research. Several UAB members told us that they had little interaction with private researchers; two members said that those researchers were reluctant to share research secrets.

UAB HAS ACHIEVED INDEPENDENCE  
AS AN ADVISORY BODY

The UAB's general responsibility is to prepare independent advisory opinions. Independence--according to the UAB--has two advantages. First, by reporting directly to the President, the Congress, and the Secretary of Agriculture, the UAB avoids review channels that can stifle creative criticism. Secondly, the UAB is not intimidated by political concerns and controversial issues. As an example of the latter, in its October 1980 report, the UAB stated,

"If adequate national oversight of research and extension programs cannot be achieved, USDA and other Federal agencies should give consideration to abdicating their Federal planning responsibilities and to channeling all Federal research and extension funds via the formula process."

The UAB has recently requested authority to hire its own staff to discourage inappropriate influence on its discussions and reports from USDA employees providing staff assistance to the Board. We found no support that staff work provided the Board had "inappropriate influence" on the Board.

Although title XIV defines most UAB members as representatives of particular interests, the members do not see themselves as representatives of organized groups. Speaking for the UAB, the Chairman has said that the Board believes its task is to interact among Board members and with researchers and not to serve as mere conduits for the opinions of others. The Board Chairman said that Board members represent the multiple interests of all users rather than the interests of groups.

CONCLUSIONS

In our opinion, the Joint Council has had only limited impact on planning and coordination for agricultural research. Moreover, in its present form and role, its impact will continue to be minimal. The Joint Council's effectiveness is limited by a lack of clear definition of its responsibilities. Agreement has not been reached among the Council members as to the definition of the Council's key responsibilities--coordination and planning. The perceptions of the inequities in the current makeup of the Council's membership also has lessened its effectiveness.

Proposed legislation would increase State participation on the Joint Council. While such an increase would make the Council a more vigorous supporter of State issues, this role seems adequately filled in the many non-Federal organizations now existing, such as the "COPS" (Committees on Organization and Policy), the American Association of University Agricultural Administrators, and the National Association of State Universities and Land Grant Colleges.

We believe the Joint Council could play a major role in planning by coordinating the food needs assessment and research needs assessment recommended in the previous chapter.

Although having a number of responsibilities under title XIV, the UAB has focused on its responsibility for reviewing national agricultural research and extension policies and priorities for both the short and long term. The UAB has contributed to the improvement of agricultural research in meeting this responsibility.

UAB members see the UAB's role in the agricultural research and extension system as that of an independent body of individual users of agricultural research and extension presenting advisory opinions on the food and agricultural sciences. We feel this is a proper role for the Board.

#### JOINT COUNCIL COMMENTS

We provided a draft of this report to the Executive Director of the Joint Council and UAB and received comments from the Joint Council. The Joint Council felt its reports and activities made significant contributions to planning. The Council also felt that our report was overly critical in tone. While we did make some changes to the report language as appropriate, the Council's comments did not cause us to alter our findings, conclusions, or recommendation. The Joint Council agreed with our proposed legislation for a food needs assessment and stated that the Council is prepared to lead such an effort. (See app. IV.)

PROPOSED REVISIONS TO PUBLICLAW 95-113 TITLE XIV

After subsection (6) of section 1402, insert new subsections (7) and (8):

"(7) long range planning for agricultural research is essential to achieve advances in food and agricultural sciences and technology to meet rising food demands and alleviate inadequacies of the agricultural marketing system;

(8) long range planning for agricultural research and extension has been inhibited by disagreement in the research community as to the problems that exist in agricultural production, marketing, and utilization, the planning needed to address those problems, and where the responsibility for planning should lie;"

Renumber present subsections (7), (8), and (9) as subsections (9), (10), and (11).

After subsection (4) of section 1405, insert new subsection (5):

"(5) take the initiative in overcoming barriers to long range planning by developing, in conjunction with the States, land-grant colleges and universities, and the State directors of agricultural experiment stations and cooperative extension services, a long term needs assessment for foods and fibers, and by determining the research required to meet the identified needs; obtain and incorporate, both prior to and during the formulation of basic policies, goals, priorities, and strategies as part of the needs assessment, the advice and recommendations of the States, land-grant colleges and universities, State agricultural experiment stations, the Joint Council, the Advisory Board, and other appropriate institutions;"

Renumber present subsections (5), (6), (7), (8), and (9) as subsections (6), (7), (8), (9), and (10).

**APPENDIX I**

**APPENDIX I**

**Add at the end of section 1410 the following subsection:**

**"(4) in the report of February 1, 1983, the  
Secretary's needs assessment developed pur-  
suant to the provisions of section 1405(5)  
of this title."**

GEORGE E. BROWN, JR.  
2341 VOLSE OFFICE BUILDING  
WASHINGTON, D.C. 20515  
(202) 225-6161

COMMITTEES  
AGRICULTURE  
SCIENCE AND TECHNOLOGY  
CHAIRMAN, SUBCOMMITTEE ON  
SCIENCE, RESEARCH AND TECHNOLOGY  
TECHNOLOGY ASSESSMENT  
BOARD

## Congress of the United States

### House of Representatives

Washington, D.C. 20515

September 3, 1980

PLEASE  
REPLY  
TO  
  
 36TH DISTRICT OF  
CALIFORNIA  
  
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MISSION INN ROTUNDA  
3618 MAIN STREET, SUITE 500  
P.O. BOX 71  
RIVERSIDE, CALIFORNIA 92502  
(714) 666-8883  
  
 VANISH TOWER  
20 NORTH D STREET  
7TH FLOOR  
SAN BERNARDINO, CALIFORNIA 92401  
(714) 825-2472  
  
 WASHINGTON OFFICE

The Honorable Elmer Staats  
Comptroller General of the United States  
General Accounting Office  
441 G Street  
Washington, D.C. 20548

Dear Mr. Staats:

In your July 31, 1980 statement before the Science, Research and Technology Subcommittee on "Long-Term Planning for National Science Policy", you discussed the role of government in strategic planning and the difficulty of achieving integrated planning policies. Nowhere is this difficulty more evident than in our planning in the food and renewable resources area. As the recently released "Global 2000" study points out, we will be faced with increasing problems in this area, making strategic planning more essential.

Consequently, I would like the General Accounting Office to develop a report on strategic planning for food and agriculture with particular emphasis on agricultural research and development.

I am concerned that a lack of adequate strategic planning for agricultural research and development could lead to a serious underutilization of our agricultural resources or leave us unprepared for the changes that are sure to come over the next few decades. For this reason I am requesting that GAO address the following questions

- 1.) How and where is long-term planning for agricultural research and development conducted?
- 2.) What is the rationale behind these planning efforts? Is it reasonable?
- 3.) Have past planning efforts been successful? Are our current research policy and efforts driven by a plan?

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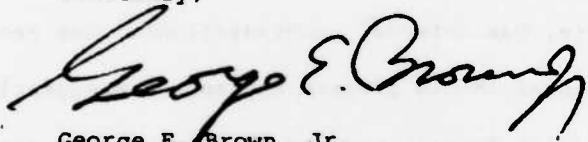
The Honorable Elmer Staats  
September 3, 1980  
page two

4.) What should the determinants be for strategic planning in agricultural research and development? Is the present political and organizational structure of USDA and other affected agencies receptive to strategic planning? If not, what options would GAO recommend for such planning?

Cognizant of a similar study under way with the Office of Technology Assessment, I would hope that your efforts will be closely coordinated with the work of OTA.

I would like to have at least an interim product touching on these questions for Congressional consideration in reviewing legislation to be made a part of the 1981 Farm Bill.

Sincerely,



George E. Brown, Jr.  
Member of Congress

cc: The Honorable Thomas Foley  
Chairman, House Agriculture Committee

The Honorable Kika de la Garza  
Chairman, Department Oversight Subcommittee  
of House Agriculture Committee

7/14/81

## GAO DRAFT REPORT - Long-Range Planning

Overview - ARS

We agree in principle that long range planning is useful. We agree that the total ARS effort in long- and short-range planning can certainly be improved.

We do not agree with the sweeping conclusion that "Currently, such (long range) planning is not being conducted." In our opinion the report has not fairly assessed current ARS planning activities.

The report, furthermore, has internal contradictions. One recommendation states that the Department should prepare a plan. Subsequently the report recommends that the Joint Council perform this task. The report further states that it is doubtful that the USDA can develop a national plan. [See GAO note 1 on p. 28.]

It is not clear whether the report writers recognize that planning takes place at many levels (worldwide programs to specific projects). Neither is it clear as to the level they would like to see improved. At times it appears that the GAO writers are pointing out the need for a Department long-range plan which encompasses far more than the research components (programs to assess and meet future feed and fiber needs -- social programs, support programs, and research). [See GAO note 2 on p. 28.]

Because of the long term nature of research we believe that the budget process and operational planning are at least in a large part also long-range planning. When a commitment is made in many areas to fund research programs, it is in fact a commitment to continue this line of endeavor for 10 to 20 years. [See GAO note 3 on p. 28.]

We do not agree that the scientific community has treated land and water as limitless and feel strongly that this particular reference or statement should be deleted. It is incorrect.

In ARS long-range planning activities, we have outlined goals and objectives (National Research Programs) as the report states. For long range planning in science, some believe that this is sufficient. The scientists then like to be left to their own initiative, skills and creativity to plan the details with the assistance and guidance of National Research Program Leaders. We also are working on operating plans involving two budget cycles or six years for all major research areas. This seems to be about the right operational timeframe for orderly changes in emphasis as related to advancements or projected advancements in science.

Perhaps GAO could document to a greater extent the efforts that we have made in ARS to plan ahead; i.e., long term program redirections and initiatives such as the greater emphasis on basic research, integrated pest management, biological control, genetic engineering, germplasm, genetics of milk production, etc. After such documentation the planning skills in GAO could then be used to guide and assist ARS in development of a better planning system which we in NPS certainly recognize is needed.

We were pleased to see in the report that GAO authors recognized that long range planning in the agricultural research system is difficult at best because of the numerous and diverse organizations involved.

We have made specific comments which we will be glad to discuss now or with the authors at another time.

**APPENDIX III****APPENDIX III**

Note: 1. We recommended that the Department develop a plan for Department-funded and -directed research, not a national plan. We recommended that the Joint Council coordinate a food needs assessment. There is no contradiction.

2. Our discussion of long-range planning concerns integrated plans for research missions rather than for specific projects. Any such plan would of necessity be involved with social programs, support programs, and research. A good plan is not developed in isolation but recognizes how it affects other areas and how these areas in turn affect the research component.

3. This supports our position. The fact that this commitment is made makes planning necessary. Many of these research areas do have 10- to 20-year commitments. However, this is a faulty process: there is little knowledge of the ultimate impact of the research area or the interaction among research areas.

## JOINT COUNCIL ON FOOD AND AGRICULTURAL SCIENCES

Secretariat:  
Rm. 351A, Admin. Bldg.  
U.S. Department of Agriculture  
Washington, D.C. 20250

JUL 20 1981

SUBJECT: Review of Draft of Proposed Report, "Long-Range Planning can Improve the Efficiency of Agricultural Research and Development"

TO: Jack Brock  
GAO Evaluator  
General Accounting Office  
Washington, D. C. 20548

The Joint Council on Food and Agricultural Sciences Executive Committee appreciates the opportunity to review and comment on the draft of a proposed report, "Long-Range Planning can Improve the Efficiency of Agricultural Research and Development." Even though the timeframe was very short, we have reached a few conclusions which we consider of primary importance.

It is clear to us, based on interactions with the staff at our June meeting and further review of the draft report, that we have a serious communication problem. That problem is exacerbated by what appears to be a highly critical and negative tone throughout the report.

We believe we have cut through much of the difficulty generated by those problems and conclude the following:

1. What you define as "long-range planning" is not what most participants of the "system" think of as "planning." Most believe we do plan and we believe you will, upon reflection and reconsideration, concede that we do. [See GAO note 1 on p. 31.]
2. Given the decentralized and pluralistic nature of the agricultural research system, a system so structured in legislation and with interdependent public and private institutions and organizations, centralized long-range planning, as we interpret your definition, is indeed difficult. This does not suggest, however, that planning is not important, both for individual performers and for the system collectively. We agree that planning must be needs-oriented and within a longer time horizon - perhaps not 50 years, as you suggest, but certainly 10 to 20 years.

Joint Council has been working toward that end, if not for the total program, for major subsets thereof. We began with the "Areas of Emphasis" report which attempts to highlight major areas that we believe would require emphasis over at least the present decade. That was followed by the "Proposed Initiatives" report which narrowed the field somewhat to critical areas upon which we believe we could focus. We are now in the process of designing, at least for the area of agricultural productivity, activities that may lead us close

Jack Brock

2

to a "long-range plan" by your definition. Thus we suggest that here we do see major elements of parallel. We would thus take exception to your conclusion that the Joint Council "has not yet made any significant contributions" to planning.

[See GAO note 2 on p. 31.]

3. We agree that neither USDA nor any other element of the agricultural research system can succeed in developing "a national plan" for the "system." We are prepared to take up your challenge for the Joint Council to lead an effort "to identify future food and agricultural needs and the research alternative which would assist in meeting them." We will be seeking opportunities to dialogue with GAO staff, Congressman Brown and his subcommittee, Department, and other Executive Branch policy officials, and others as we try to sort through this opportunity. [See GAO note 3 on p. 31.]
4. We "smart" somewhat at the negativism stressed about the Council's effort, much of which we conclude flows from the "inhibiting factors" noted in the report and to "static" in the communications system. We have tried to interpret the responsibilities put upon us, and have tried to discharge them to the best of our ability. We believe we deserve at least a recognition for the start that has been made and some assistance in moving forward to complete our job. We are afraid that the report neither gives us that recognition nor provides any assistance and it may, in fact, be used by some as another "inhibitor."

[See GAO note 4 on p. 31.]

JAMES H. ANDERSON  
Cochairman, Joint Council on  
Food and Agricultural Sciences

ANSON R. BERTRAND  
Cochairman, Joint Council on  
Food and Agricultural Sciences

Note: 1. Our definition of long-range planning is generally accepted. This definition was developed based upon commonly accepted definitions of long-range planning and discussions with agricultural research managers. In fact, the Joint Council states that it is undertaking some projects in line with our definition, as shown in its third comment.

2. We suggested a range of from 5 to 50 years for long-range planning. We did not specify 50 years.

3. We are pleased that the Joint Council has accepted our legislative proposal and is willing to take the lead in identifying future food needs and the research alternatives necessary to meet those needs.

4. We carefully reviewed our report based on this criticism and made some changes as we thought appropriate. In no instance did we alter our findings, conclusions, or recommendation.

(097470)

**DATE  
ILME**